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For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: METHODS FOR DIAGNOSIS AND PROGNOSIS OF CANCER

(57) Abstract: We have discovered a protein in humans, herein referred to as thymosin R16 (SEQ ID NO: 1), that is expressed in human prostate cancer tumors but not in specimens of benign prostate hyperplasia (BPH) tissues. In contrast, prostate specific antigen (PSA), the gold standard of prostate cancer diagnosis, is highly expressed in BPH tissues. Increased expression of thymosin (316) has a high correlation to disease state in a number of cancers including prostate cancer and cancers of epithelial origin. Accordingly, method of diagnosing and prognosing cancer in a patient by measuring the level of thymosin (316) in a biological test sample obtained from the patient are provided.

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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/00447

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C12Q 1/68; C12P 19/34; C07H 21/02, 21/04; G01N 33/574; C07K 14/435  
US CL : 435/6, 7.1, 91.2; 536/23.1, 23.5, 24.31, 24.33; 530/350, 387.1

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
U.S. : 435/6, 7.1, 91.2; 536/23.1, 23.5, 24.31, 24.33; 530/350, 387.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
Please See Continuation Sheet

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6,150,117 A (ZETTER et al) 21 November 2000 (21.11.2000), columns 4-6.	1-16
Y	SHOU et al. Expression profiling of a human cell line model of prostatic cancer reveals a direct involvement of interferon signaling in prostate tumor progression. Proceedings of the National Academies of Science, USA. 05 March 2002, Vol. 99, No. 5, pages 2830-2835, see especially pages 2833-2834.	1-16
Y	YOKOYAMA et al. Identification and cloning of neuroblastoma-specific and nerve tissue-specific genes through compiled expression profiles. DNA Research. 1996, Vol. 3, No. 5, pages 311-320.	1-16

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/00447

Continuation of B. FIELDS SEARCHED Item 3:

WEST: US, EP, JP, WO patents; DIALOG: MEDLINE, CA, BIOSIS, EMBASE, SCISEARCH; EMBL, GenBank, EST-database, SwissProt

search terms: SEQ ID NO: 1-3, thymosin beta-16, NB thymosin, TYBN\_human, TMSNB

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/00447

**Box No. I**      **Nucleotide and/or amino acid sequence(s)** (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:

a. type of material



a sequence listing



table(s) related to the sequence listing

b. format of material



in written format



in computer readable form

c. time of filing/furnishing



contained in the international application as filed



filed together with the international application in computer readable form



furnished subsequently to this Authority for the purposes of search

2. ☒

In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional comments: